DUDEK

Tijuana River Sediment Management Work Plan
IBWC Citizens Forum

City of Imperial Beach

PRESENTED BY DUDEK wood.

NOVEMBER 4TH, 2021

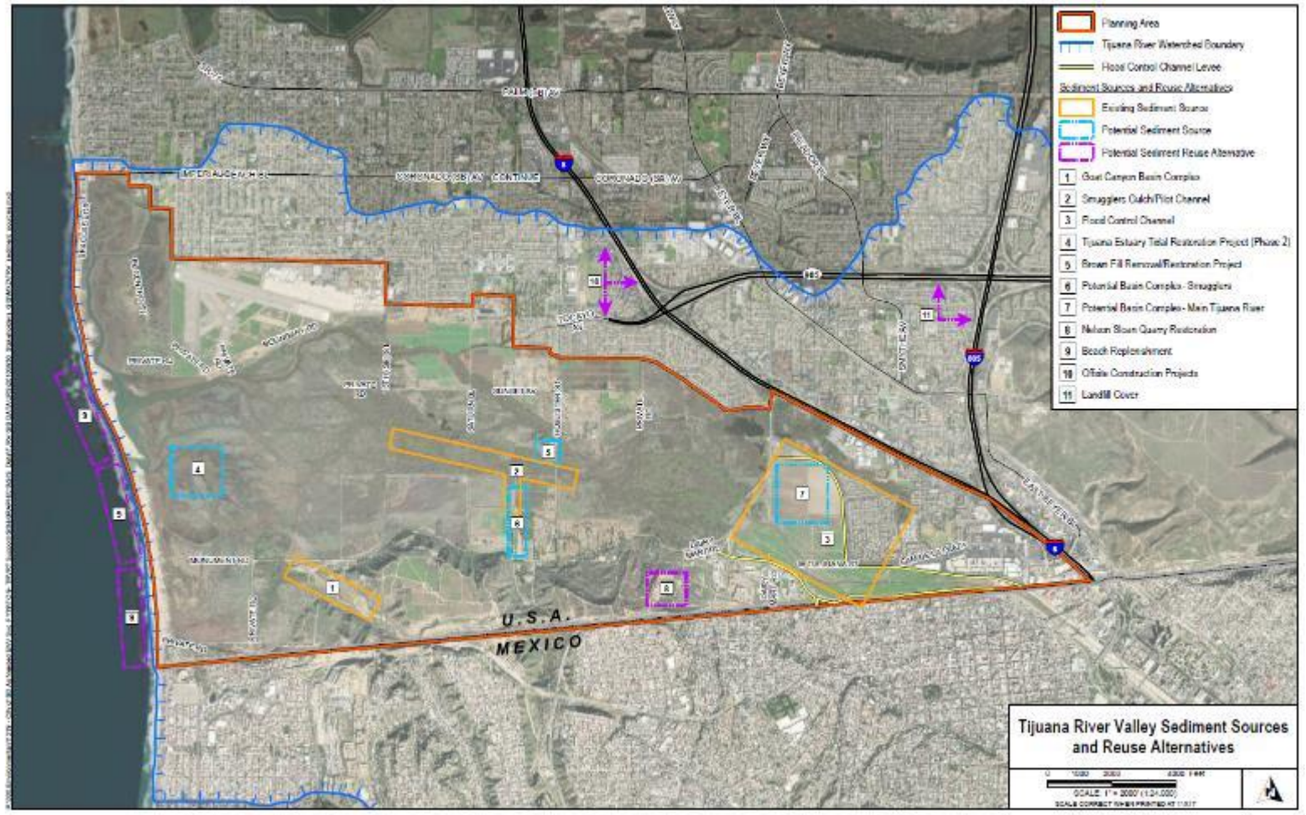
Agenda

1. Project Overview
2. Sediment Management Work Plan
3. Water and Sediment Characterization Monitoring
4. Next Steps

1 Project Overview

Planning effort to support long-term sediment management activities.

- Sediment Management Work Plan
- Water Quality and Sediment Monitoring Program

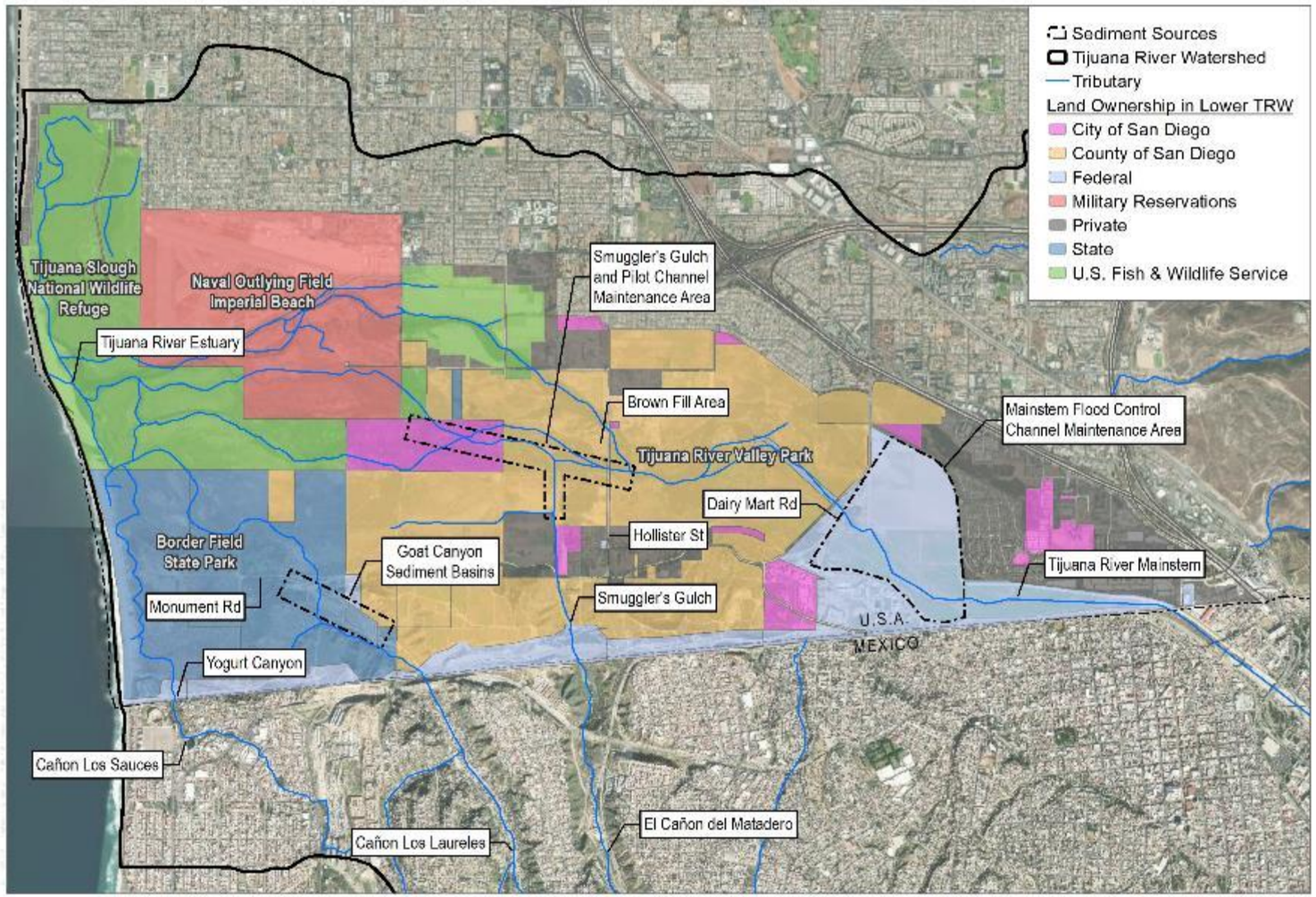


2 Sediment Management Work Plan

PURPOSE:

Develop sediment management processes to handle and beneficially reuse sediment captured in the Valley

Tijuana River Valley Stakeholders and Sediment Source Areas



Source Name	Ownership	Estimated Quantity
Goat Canyon		Annual 25,000-60,000 cy
Smuggler's Gulch & Pilot Channel		Annual Smuggler's Gulch: 50,000-100,000 cy Pilot Channel: 10,000-30,000 cy
Tijuana River Main Channel		Existing 1,000,000 cy Annual 60,000 cy
Brown Area Fill		One-time Removal 16,000-35,000 cy
Tijuana Estuary		Project-based ~500,000 cy

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Sediment Management Options

Category	Alternatives
Beneficial Re-use	Beach and Nearshore Nourishment
	Thin-Layer Sediment Addition
	Levee Rehabilitation
	Construction Material
	Engineered Cap
	Mine Reclamation
Disposal	Open Ocean Dredged Material Disposal
	Confined Aquatic Disposal
	Upland Land Fill Disposal

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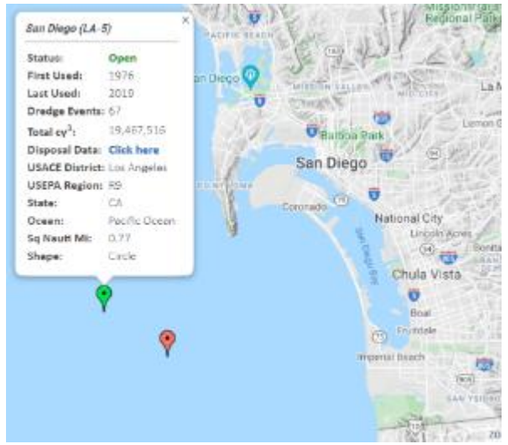
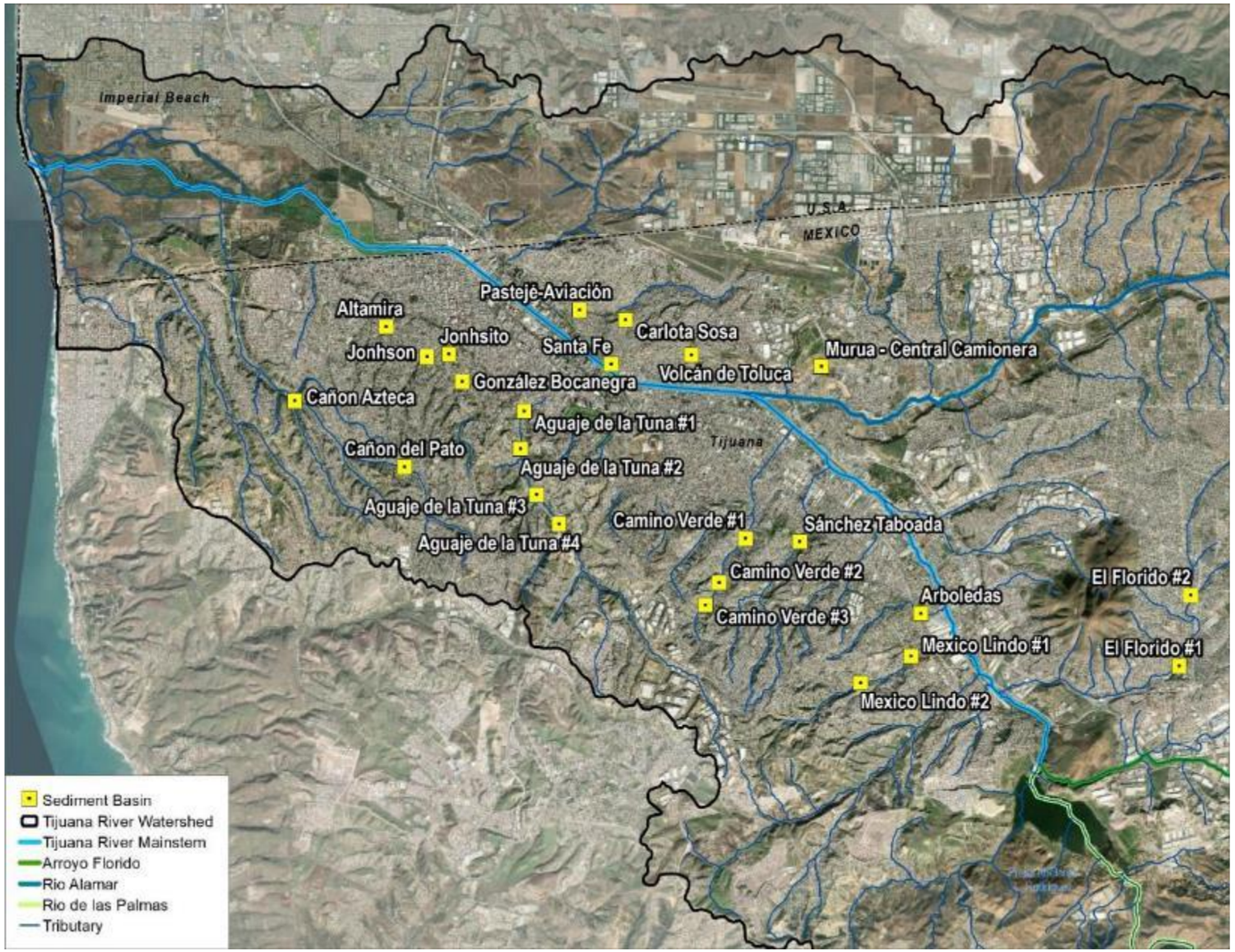


Sediment Management Basins in Mexico



Sediment Basin Name	capacity CY
Aguaje de la Tuna #1	2,930
Aguaje de la Tuna #2	3,060
Aguaje de la Tuna #3	13,340
Aguaje de la Tuna #4	10,590
Altamira	1,110
Arboledas	390
Camino Verde #1	4,710
Camino Verde #2	2,350
Camino Verde #3	6,280
Cañon Azteca	1,310
Cañon del Pato	4,710
Carlota Sosa	260

Sediment Basin Name	capacity CY
El Florido #1	5,490
El Florido #2	8,110
González Bocanegra	2,620
Jonhsito	4,190
Jonhson	7,190
Mexico Lindo #1	5,100
Mexico Lindo #2	3,920
Murua - Central Camionera	200
Pastejé-Aviación	2,960
Sánchez Taboada	5,230
Santa Fe	390
Volcán de Toluca	1,310

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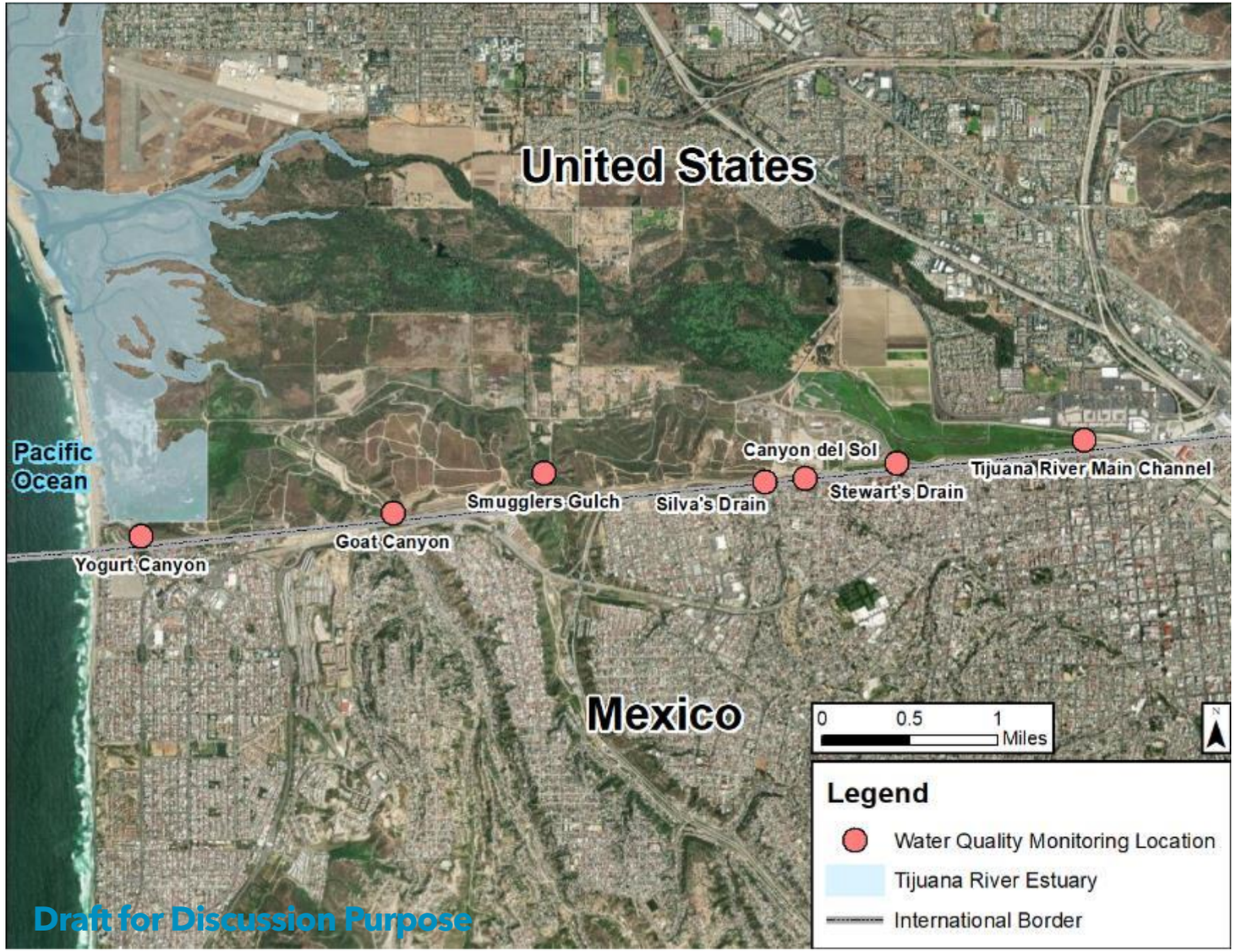
3 Sediment Management Work Plan- Monitoring Program

- Water Quality Characterization Monitoring (7 sites)
  - 2 Wet Weather Sampling Events (1 completed)
  - 2 Dry Weather Sampling Events (1 completed)
- Sediment Characterization Monitoring (5 sites)
  - 2 Dry Weather Sampling Events (1 completed)
- Trash Evaluations (7 sites)
  - Conducted Simultaneously with Sediment Characterization
- Drone-assisted Trash Monitoring

Water Quality Characterization Monitoring Locations



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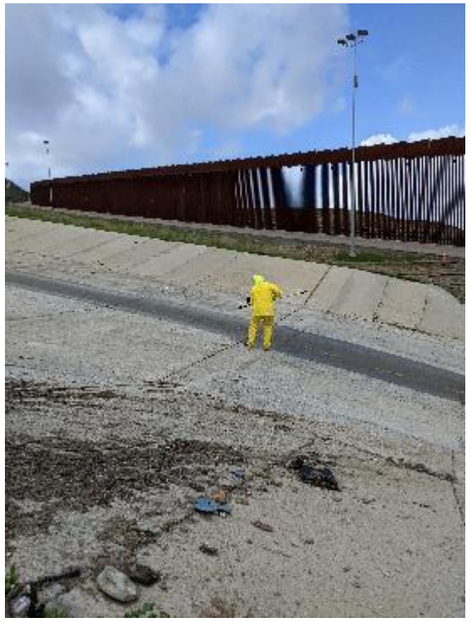
Wet Weather Monitoring Results

March 10, 2021 - 0.56 inches of rain

Location	TSS (mg/L)	Fecal Coliform (MPN/100mL)
Yogurt Canyon	28	>1,600,000 •
Goat Canyon	3,820	>1,600,000 •
Smuggler's Gulch	262	>1,600,000 •
Silva's Drain	128	300,000
Canyon Del Sol	204	>1,600,000 •
Stewarts Drain	1,060	>1,600,000 •
Tijuana Main River	832	>1,600,000 •

• Exceeds reporting limit

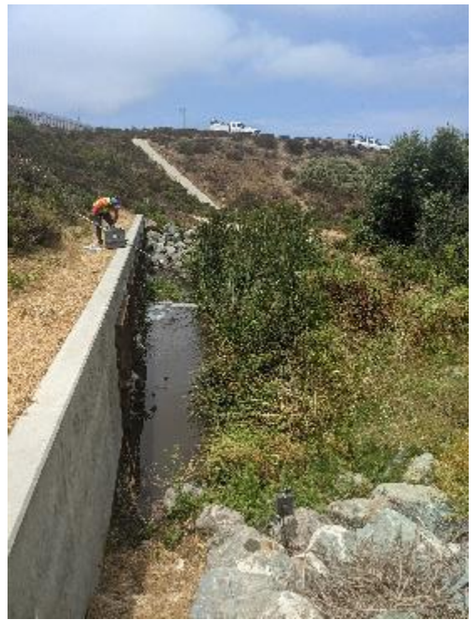


Dry Weather Monitoring Results

June 23, 2021

Location	TSS (mg/L)	Fecal Coliform (MPN/100mL)
Yogurt Canyon	148	240,000
Goat Canyon	11,500	>1,600,000●
Smuggler's Gulch	199	<2,000
Silva's Drain	160	900,000
Canyon Del Sol	2,700	>1,600,000●
Stewarts Drain	272	240,000
Tijuana Main River	22	800

● Exceeds reporting limit



Sediment Characterization Monitoring Locations

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Sediment Characterization

- October 21, 2021- (Event 1)
  - 3 cores composited from each sediment source area
  - Comprehensive suite of analytes
    - CCR Title 22
    - SCOUP
    - Inland Testing Manual
  - Analytical results pending

Trash Evaluation Preliminary Results

Location	Trash Score
Brown Fill	1
Flood Control Channel	11
Goat Canyon Sediment Basins	2
Potential Basin(s)- Main Tijuana River	1
Potential Basin(s)- Smuggler's Gulch	7
Smuggler's Gulch/Pilot Channel	5
Tijuana Estuary Tidal Restoration Project	--

Trash Evaluation Drone Surveys

- Preliminary assessment- January 30th, 2021
- Evaluated drone-based trash monitoring with field methods
- Collaboration with 4Walls International

Drone imagery courtesy of 4 Walls International
www.4wallsintl.com
@4wallsintl

Trash Evaluation Drone Surveys

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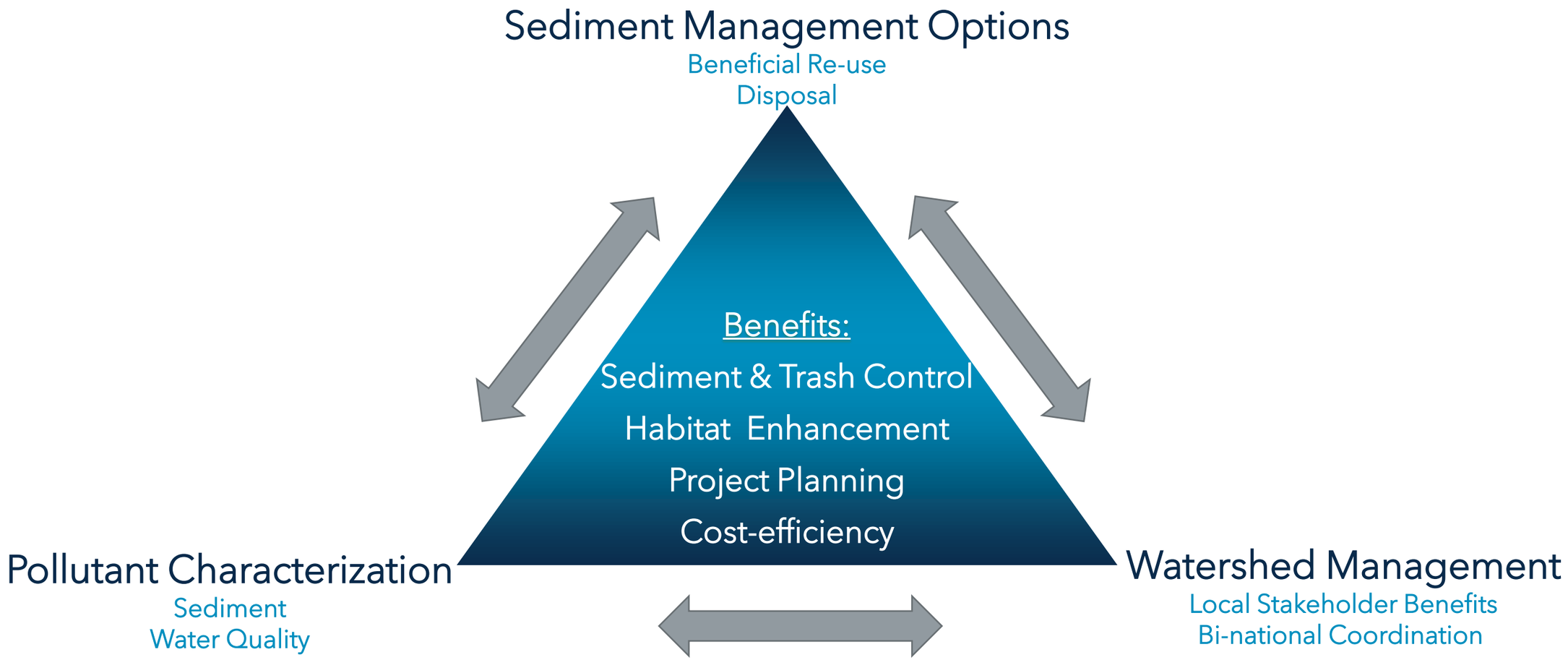
4 Next Steps- Connecting it Together



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Key Takeaways

Sediment Management Framework Provides for Operational Efficiency

- Long-term Operations and Maintenance Planning
- Costs
- Regulatory Permitting Guidance

Cross-border Discharges Impact Water & Sediment Quality

- Trash and Plastics
- Fecal Indicator Bacteria
- Turbidity/CBOD

Stakeholder Collaboration Necessary

- Local Stakeholder Partnerships
- Improved Project Delivery
- Federal Contribution

THANK YOU

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